

# PATENT ABSTRACTS OF JAPAN

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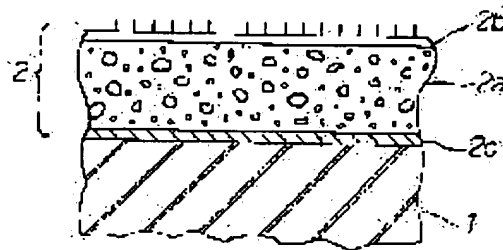
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## (54) SKIN INTEGRALLY MOLDED ARTICLE

### (57)Abstract:

PROBLEM TO BE SOLVED: To provide a skin integrally molded article wherein no wrinkle is generated on the skin material even when it is a complicated three-dimensional shape.

SOLUTION: In this molded article, a skin material 2 is integrally molded on the surface of a base material 1 by means of injection molding. In this case, the skin material 2 is prepd. by using a urethane foamed body 2a with a density of 0.02-0.05 g/cm<sup>3</sup> as a central layer and laminating a surface layer 2b for decoration consisting of a fabric material on the surface and a sheet layer 2c consisting of a high density nonwoven fabric on the back surface.



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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention really [ epidermis ] which Siwa does not generate in epidermis material even if it is a complicated three-dimensions configuration relates to mold goods.

[0002]

[Description of the Prior Art] From the former, many mold goods are really [ epidermis ] which fabricated epidermis material in one on the base material front face used in the door trim for automobiles etc. However, recently, the design was diversified, the products of a complicated three-dimensions configuration had increased in number, epidermis material may be made to generate Siwa in the rapid configuration change section, the unification section of supply resin, etc. in this case, and there was a trouble of becoming a poor appearance.

[0003] Then, although the valve gate was used for shaping metal mold or what included the special controlling mechanism in the making machine was proposed as it was shown in JP,2-102010,A in order to prevent generating of Siwa for example, it was what becomes very [ in cost ] high. Moreover, although the epidermis material which stuck the protection film on the rear face, the approach using the epidermis material beforehand fabricated in the three-dimensions configuration, etc. were proposed, while the production process was complicated, there was a trouble of becoming cost high, and the degree of freedom of a design also had further the trouble of receiving constraint.

[0004]

[Problem(s) to be Solved by the Invention] This invention solves the above conventional troubles, and without Siwa's not occurring in epidermis material and using special equipment, even if it is a complicated three-dimensions configuration, it can produce cheaply by the easy forming cycle, and is completed for the purpose of really [ with the still higher degree of freedom of a design / epidermis ] offering mold goods.

[0005]

[Means for Solving the Problem] It really [ epidermis ] which fabricated epidermis material in one on the base material front face with injection molding sets to mold goods, and mold goods are really [ of this invention made in order to solve the above-mentioned technical problem / epidermis ] said epidermis material A consistency 0.02 - 0.05 g/cm<sup>3</sup> It is characterized by carrying out the laminating of the surface layer for an ornament which becomes a front face from cloth material by using urethane foam as a main layer, and the sheet layer which becomes a rear face from a high density nonwoven fabric.

[0006]

[Embodiment of the Invention] The gestalt of desirable operation of this invention is shown in it, referring to a drawing to below. the base material with which a drawing show the case where this invention be apply to the door trim for automobiles , and one in drawing consist of thermoplastic synthetic resin , such as polyethylene , and 2 be the epidermis material by which an attachment unification be carried out in [ the front face of this base material 1 ] one , and the point which be that by

which such a door trim for automobiles be fabricate in one by injection molding be this conventional kind of really [ epidermis ] the same as mold goods and a basic target .

[0007] And it sets to this invention and is said epidermis material 2 A consistency 0.02 - 0.05 g/cm<sup>3</sup> It has a characteristic configuration at the point which should carry out the laminating of the sheet layer 2c which becomes surface-layer 2b for an ornament which sets urethane foam to main layer 2a, and becomes a front face from cloth material, such as a fabric, and a rear face from a high density nonwoven fabric. Namely, it solves that generating of Siwa is a phenomenon produced under the configuration change by sheet layer 2c influencing surface-layer 2b. This main layer 2a is made to act as shock absorbing material by using the epidermis material 2 which sets to main layer 2a the urethane foam which come to complete this invention and is in above fixed consistencies within the limits. It is made not to influence to surface-layer 2b by making configuration change produced in sheet layer 2c leading to Siwa generating absorb thoroughly by main layer 2a, and hauling of surface-layer 2b and generating of Siwa accompanying contraction are prevented.

[0008] It is said main layer 2a A consistency 0.02 - 0.05 g/cm<sup>3</sup> For having considered as urethane foam, consistencies are 0.02 g/cm<sup>3</sup>. In the following, elasticity cannot absorb configuration change thoroughly [ it is large and ], but consistencies are 0.05 g/cm<sup>3</sup>. It is because sufficient buffer action is not obtained when large. Moreover, in order to acquire the prevention effectiveness of sufficient Siwa generating, as for sheet layer 2c, it is desirable that eyes use a two or more 15 g/m PET nonwoven fabric, and it is still more desirable to make the elongation property (modulus) of the epidermis material 2 into the range of 4-30N / 50mm.

[0009] Thus, although what was constituted produces the remainder from which this melting resin 3 pulls sheet layer 2c, and causes Siwa in the unification section of the melting resin 3 and 3 between the gates when injection molding within the metal mold 10 which has two or more gates, and 11, as shown in drawing 2 Since main layer 2a exists, as it is shown in drawing 3 , in order that main layer 2a of sheet layer 2c which is elastic in a part may push into the melting resin 3 side not much, Siwa does not occur on surface-layer 2b.

[0010] Moreover, like the armrest section 21 of the door trim 20, as shown in drawing 4 , as shown in drawing 5 , the big elongation of the epidermis material 2 will arise in the direction of an arrow head, contraction of the epidermis material 2 will arise in the direction which intersects perpendicularly with this, and Siwa will occur in a part which carries out configuration change at a two-dimensional flat surface from a three-dimension solid curved surface. Even in this case, in this invention, as shown in drawing 6 , since main layer 2a of sheet layer 2c which originated in configuration change and was produced which is elastic in a part absorbs not much, Siwa does not occur on surface-layer 2b. In this case, since generating of Siwa by the elongation of the epidermis material 2 can be controlled if the elongation property of the epidermis material 2 is made into the range of 4-30N / 50mm, it is more desirable. Moreover, even if it is the case where it sticks only on the particular part of a base material as this invention is shown in drawing 7 R> 7, and shown in drawing 8 besides in the case of sticking the epidermis material 2 all over a base material, the product of the high quality which does not have Siwa similarly will be obtained.

[0011]

[Effect of the Invention] Without Siwa's not occurring in epidermis material and using special equipment, even if it is a complicated three-dimensions configuration, this invention can be cheaply produced by the easy forming cycle, and its degree of freedom of a design is also still higher so that clearly also from the above explanation. Therefore, the place which this invention really [ epidermis ] which swept away the conventional trouble contributes to development of industry as mold goods is size very much.

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[Translation done.]

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DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] It is the sectional view showing the gestalt of operation of this invention.

[Drawing 2] It is the expanded sectional view really [ epidermis ] concerning this invention showing the forming cycle of mold goods.

[Drawing 3] It is the expanded sectional view really [ epidermis ] concerning this invention showing the forming cycle of mold goods.

[Drawing 4] It is the perspective view showing an example of a door trim.

[Drawing 5] a part of drawing 4 -- it is an enlarged drawing.

[Drawing 6] It is the sectional view showing the gestalt of other operations.

[Drawing 7] It is the sectional view really [ epidermis ] concerning this invention showing the forming cycle of mold goods.

[Drawing 8] It is the sectional view showing other forming cycles.

[Description of Notations]

1 Base Material

2 Epidermis Material

2a Urethane foam

2b Cloth material

2c Sheet layer

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[Translation done.]

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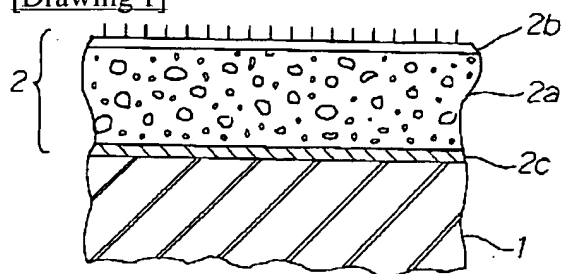
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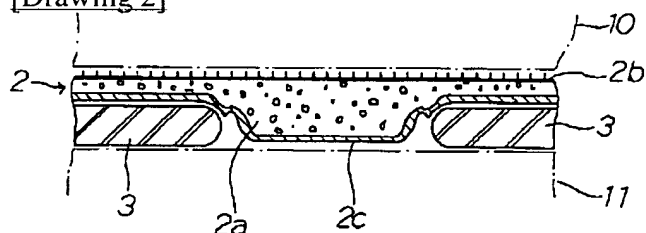
DRAWINGS

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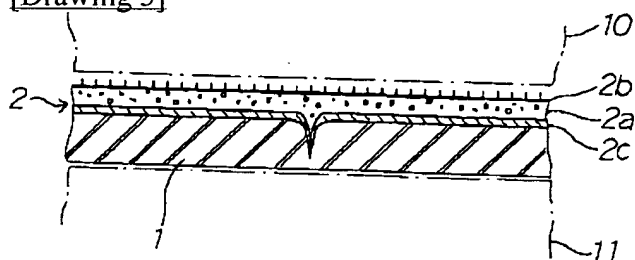
[Drawing 1]



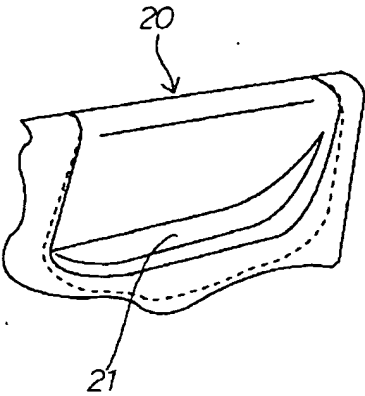
[Drawing 2]



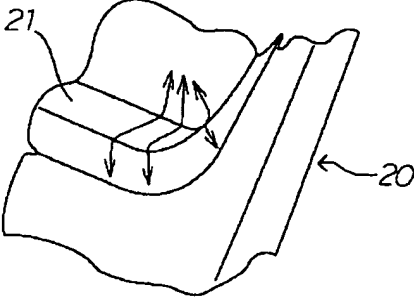
[Drawing 3]



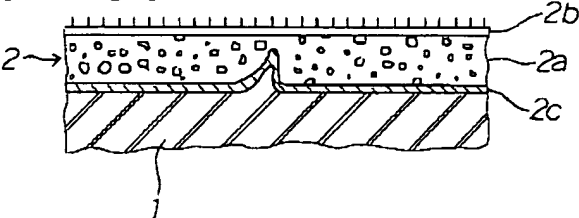
[Drawing 4]



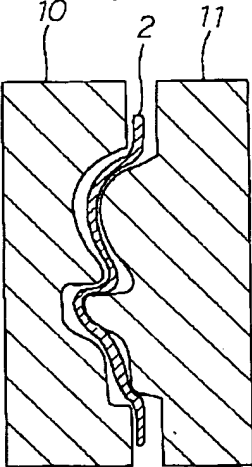
[Drawing 5]



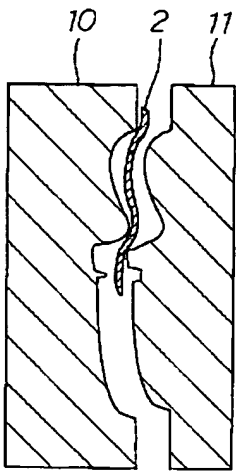
[Drawing 6]



[Drawing 7]



[Drawing 8]



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CLAIMS

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[Claim(s)]

[Claim 1] It is a base material (1) by injection molding. It is epidermis material (2) to a front face. It really [ epidermis ] which was fabricated in one sets to mold goods. Said epidermis material (2) A consistency 0.02 - 0.05 g/cm<sup>3</sup> They are really [ epidermis ] which is characterized by carrying out the laminating of the surface layer for an ornament (2b) which becomes a front face from cloth material by using urethane foam (2a) as a main layer, and the sheet layer (2c) which becomes a rear face from a high density nonwoven fabric mold goods.

[Claim 2] Epidermis material (2) Epidermis one mold goods according to claim 1 which have an elongation property in the range of 4-30N / 50mm.

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[Translation done.]